

USPTO PATENT FULL-TEXT AND IMAGE DATABASE[Home](#)[Quick](#)[Advanced](#)[Pat Num](#)[Help](#)[Next List](#)[Bottom](#)[View Cart](#)*Searching US Patent Collection...*

Results of Search in US Patent Collection db for:
SPEC/shift-by-wire AND SPEC/transmission: 78 patents.
Hits 1 through 50 out of 78

















Final 28 Hits

Jump To

Refine Search

PAT.
NO.

Title

- 1 [7,040,187](#)  [Shift control system and shift control method](#)
- 2 [7,021,410](#)  [Method and system for determining the torque required to launch a vehicle having a hybrid drive-train](#)
- 3 [6,997,281](#)  [Driver control input device for drive-by-wire vehicle](#)
- 4 [6,996,465](#)  [Shifting system for vehicle](#)
- 5 [6,993,994](#)  [Gear input unit](#)
- 6 [6,984,191](#)  [Range determination apparatus, range determination method, and program therefor](#)
- 7 [6,983,668](#)  [Park solenoid assembly for an internal electronic transmission range selection \(ETRS\) system](#)
- 8 [6,948,740](#)  [Vehicle with multiple driver interfaces](#)
- 9 [6,948,582](#)  [Shift device for vehicle](#)
- 10 [6,948,395](#)  [Limp home device for a vehicle with automatic transmission](#)
- 11 [6,935,282](#)  [Vehicle having an internal combustion engine and a fuel cell and method of making a vehicle](#)
- 12 [6,918,314](#)  [Shift-by-wire transmission actuator assembly](#)
- 13 [6,904,823](#)  [Haptic shifting devices](#)
- 14 [6,898,496](#)  [Pivoting arm driver control input device](#)
- 15 [6,893,378](#)  [Transmission system and method of operation to accommodate engagement of centrifugal clutch](#)
- 16 [6,881,175](#)  [Combined control device for the parking brake and park lock function of motor vehicles](#)



- 17 6,880,855 Rotary driver control input device
- 18 6,880,687 Transmission system and method of operation to accomodate engagement of centrifugal clutch
- 19 6,880,419 Internal electronic transmission range selection (ETRS) system for an automatic transmission
- 20 6,877,390 Shift range changeover mechanism
- 21 6,866,611 Vehicle range shift mechanism
- 22 6,859,710 Automated centrifugal clutch system with open-loop throttle control
- 23 6,851,538 Control unit gear or shift program selection of an automatic vehicle gearbox
- 24 6,848,332 Shift device and switch device thereof for vehicle
- 25 6,848,331 Shift lock device
- 26 6,845,683 Shifting-transfer mechanism
- 27 6,835,162 Automatic transmission system for vehicle
- 28 6,834,563 Shifting system and method for a motor vehicle transmission
- 29 6,827,174 Driver control input device having opposing movable posts for steering
- 30 6,779,645 Parking lock releasing device
- 31 6,736,754 Method for operating a motor vehicle having an automatic transmission with improved comfort
- 32 6,732,847 Shift-by-wire shifter assembly with mechanical override
- 33 6,695,117 Motor vehicle transmission with a parking lock mechanism
- 34 6,692,406 Shift control strategy for use with an automated manual transmission coupled to a turbocharged internal combustion engine
- 35 6,663,535 Method and system for managing torque of a drivetrain
- 36 6,661,114 Shift apparatus for vehicles
- 37 6,659,900 Apparatus for controlling vehicle transmission
- 38 6,659,899 Electrohydraulic control system for controlling gearspeed changes in partially or fully automatic transmissions of vehicles
- 39 6,659,255 Shift lock device
- 40 6,658,952 Shift device
- 41 6,641,504 Method and system for establishing an engine speed target for use by a centrifugal clutch control system to launch a vehicle
- 42 6,633,806 Control for transmission system utilizing a centrifugal clutch
- 43 6,629,473 Shift lever device
- 44 6,601,685 Shift device for vehicle
- 45 6,591,175 Manual input device with force feedback function and vehicle-mounted equipment controller using same
- 46 6,589,131 Shift controlling method of a transmission
- 47 6,561,948 Control for transmission system utilizing centrifugal clutch
- 48 6,553,306 System for controlling engine braking in a vehicle driveline
- 49 6,547,696 Shift lever device
- 50 6,539,820 Method and system for transmission utilizing centrifugal clutch to overcome transmission tooth-butt

SPEC/shift-by-wire AND SPEC/transmission: 78 patents.*Hits 51 through 78 out of 78*


Prev. 50 Hits

Jump To

Refine Search

PAT.
NO. Title

- 51 [6,520,889](#) **T** [Adaptive engine control for shifting to neutral](#)
- 52 [6,508,139](#) **T** [By-wire shift lever device for vehicle](#)
- 53 [6,502,476](#) **T** [Transmission system utilizing centrifugal clutch](#)
- 54 [6,500,092](#) **T** [Shift apparatus for vehicles](#)
- 55 [6,484,686](#) **T** [Method and system for idling a diesel engine](#)
- 56 [6,440,038](#) **T** [Method and system for managing torque of a drivetrain](#)
- 57 [6,438,510](#) **T** [Recursive vehicle mass estimation system](#)
- 58 [6,406,403](#) **T** [Torque ramp down control](#)
- 59 [6,378,393](#) **T** [Method and apparatus for manually shifting an electronically controlled transmission](#)
- 60 [6,301,537](#) **T** [Adaptive calibration of X-Y position sensor](#)
- 61 [6,295,887](#) **T** [Miniaturized transmission shifter](#)
- 62 [6,238,317](#) **T** [Full-time four-wheel drive transmission with limited slip clutch](#)
- 63 [6,227,067](#) **T** [Independent motor control for X-Y shifter](#)
- 64 [6,196,078](#) **T** [External electronic transmission shift system](#)
- 65 [6,167,979](#) **T** [Dynamic speed governing of a vehicle](#)
- 66 [6,167,357](#) **T** [Recursive vehicle mass estimation](#)
- 67 [6,142,905](#) **T** [Full-time four-wheel drive transmission with limited slip clutch](#)
- 68 [6,139,468](#) **T** [Electronically actuated transmission range control system](#)
- 69 [6,126,570](#) **T** [Shift synchronization using decaying torque](#)
- 70 [6,056,669](#) **T** [Shift controls for automated shifting manual transmissions with range sensing redundancy](#)
- 71 [6,049,751](#) **T** [Available speed ratio modification for splitter transmission](#)
- 72 [5,989,146](#) **T** [On-demand four-wheel drive transmission](#)
- 73 [5,946,972](#) **T** [Available speed ratio modification for splitter transmission](#)
- 74 [5,617,929](#) **T** [Movable shift console](#)
- 75 [5,505,674](#) **T** [Control system with failsafe range passages in a changeover valve for shift-by-wire automatic transmission](#)
- 76 [5,490,433](#) **T** [Semi-continuous transmission](#)
- 77 [5,409,434](#) **T** [Control system with failsafe for shift-by-wire automatic transmission](#)

78 4,912,997  Electric shift selector mechanism for transmission

SHOW FILES

File 6:NTIS 1964-2006/May W1
(c) 2006 NTIS, Intl Cpyrght All Rights Res

File 8:EI Compendex(R) 1970-2006/Apr W5
(c) 2006 Elsevier Eng. Info. Inc.

File 25:Weldasearch 19662006/Apr
(c) 2006 TWI Ltd

File 36:MetalBase 1965-20060513
(c) 2006 The Thomson Corporation

File 63:Transport Res(TRIS) 1970-2006/Apr
(c) fmt only 2006 Dialog

File 65:Inside Conferences 1993-2006/May 12
(c) 2006 BLDSC all rts. reserv.

File 81:MIRA - Motor Industry Research 2001-2006/Mar
(c) 2006 MIRA Ltd.

File 94:JICST-EPlus 1985-2006/Feb W1
(c)2006 Japan Science and Tech Corp(JST)

File 95:TEME-Technology & Management 1989-2006/May W1
(c) 2006 FIZ TECHNIK

File 266:FEDRIP 2005/Dec
Comp & dist by NTIS, Intl Copyright All Rights Res

?

Set	Items	Description
S1	0	"SHIFT-BY-WIRE" AND RANGE? AND SELECT? AND TRANSMISSION? A-ND REVERS? AND PARK?
S2	0	"SHIFT BY WIRE" AND RANGE? AND SELECT? AND TRANSMISSION? A-ND REVERS? AND PARK?
S3	0	"SHIFT-BY-WIRE" AND RANGE? AND SELECT? AND TRANSMISSION?
S4	0	"SHIFT-BY-WIRE" AND RANGE? AND TRANSMISSION?
S5	0	"SHIFT BY WIRE" AND RANGE AND TRANSMISSION
S6	1	"SHIFT BY WIRE" AND RANGE
S7	0	"SHIFT-BY-WIRE" AND RANGE
?		

S "SHIFT-BY-WIRE" AND RANGE? AND SELECT? AND TRANSMISSION? AND REVERS? AND PARK?
5 SHIFT-BY-WIRE
1296685 RANGE?
1054607 SELECT?
770686 TRANSMISSION?
222903 REVERS?
80427 PARK?
S1 0 "SHIFT-BY-WIRE" AND RANGE? AND SELECT? AND TRANSMISSION?
AND REVERS? AND PARK?
?

```
S "SHIFT BY WIRE" AND RANGE? AND SELECT? AND TRANSMISSION? AND REVERS? AND PARK?  
    7 SHIFT BY WIRE  
    1296685 RANGE?  
    1054607 SELECT?  
    770686 TRANSMISSION?  
    222903 REVERS?  
    80427 PARK?  
S2    0 "SHIFT BY WIRE" AND RANGE? AND SELECT? AND TRANSMISSION?  
      AND REVERS? AND PARK?
```


S "SHIFT-BY-WIRE" AND RANGE? AND SELECT? AND TRANSMISSION?
5 SHIFT-BY-WIRE
1296685 RANGE?
1054607 SELECT?
770686 TRANSMISSION?
S3 0 "SHIFT-BY-WIRE" AND RANGE? AND SELECT? AND TRANSMISSION?
?

S "SHIFT-BY-WIRE" AND RANGE? AND TRANSMISSION?

5 SHIFT-BY-WIRE

1296685 RANGE?

770686 TRANSMISSION?

S4 0 "SHIFT-BY-WIRE" AND RANGE? AND TRANSMISSION?

S "SHIFT BY WIRE" AND RANGE AND TRANSMISSION
7 SHIFT BY WIRE
1174781 RANGE
756513 TRANSMISSION
S5 0 "SHIFT BY WIRE" AND RANGE AND TRANSMISSION

T S6/3,KWIC/1

6/3,KWIC/1 (Item 1 from file: 95)
DIALOG(R)File 95:TEME-Technology & Management
(c) 2006 FIZ TECHNIK. All rts. reserv.

01862563 20040500827



**Progress in automotive position sensors and introduction of the Hella
inductive position sensor**
(Fortschritte bei Positionssensoren fuer Kraftfahrzeuge und Einfuehrung des
induktiven Hella Positionssensors)
Hobein, D; Dorissen, T; Duerkopp, K
Hella KG Hueck, Lippstadt, D
Vehicle Sensors, Actuators, and Diagnostics, SAE 2004 World Congress,
Detroit, US, Mar 8-11, 20042004
Document type: Conference paper Language: English
Record type: Abstract
ISBN: 0-7680-1389-5

ABSTRACT:

...conditions for assembly and ambient factors make this sensor a universal
solution for a wide range of automotive engineering applications such as
throttle sensors, accelerator pedal sensors, steering sensors, etc. Further


























...
IDENTIFIERS: CONTACTLESS SENSOR; BY WIRE SYSTEM; SHIFT BY WIRE ; STEER BY
WIRE; INDUKTIVER SENSOR; induktiver Positionssensor; Hella; Kraftfahrzeug

SPEC/"shift-by-wire" AND SPEC/"range select": 2 patents.

- 1 6,983,668  Park solenoid assembly for an internal electronic transmission range selection (ETRS) system
- 2 6,880,419  Internal electronic transmission range selection (ETRS) system for an automatic transmission


((SPEC/"shift-by-wire" AND ACLM/range) AND SPEC/vehicle) AND ACLM/select?): 0 patents.


PAT.
NO. Title


- 1 6,996,465  Shifting system for vehicle
- 2 6,984,191  Range determination apparatus, range determination method, and program therefor
- 3 6,983,668  Park solenoid assembly for an internal electronic transmission range selection (ETRS) system
- 4 6,948,582  Shift device for vehicle
- 5 6,889,812  Motor vehicle comprising tiltable gear shift unit and method of activating a parking brake forming part of the vehicle
- 6 6,880,419  Internal electronic transmission range selection (ETRS) system for an automatic transmission
- 7 6,877,390  Shift range changeover mechanism
- 8 6,866,611  Vehicle range shift mechanism
- 9 6,845,683  Shifting-transfer mechanism
- 10 6,835,162  Automatic transmission system for vehicle
- 11 6,736,754  Method for operating a motor vehicle having an automatic transmission with improved comfort
- 12 6,659,900  Apparatus for controlling vehicle transmission
- 13 6,658,952  Shift device
- 14 6,589,131  Shift controlling method of a transmission
- 15 6,553,306  System for controlling engine braking in a vehicle driveline
- 16 6,238,317  Full-time four-wheel drive transmission with limited slip clutch
- 17 6,167,979  Dynamic speed governing of a vehicle
- 18 6,142,905  Full-time four-wheel drive transmission with limited slip clutch
- 19 6,139,468  Electronically actuated transmission range control system
- 20 6,056,669  Shift controls for automated shifting manual transmissions with range sensing redundancy
- 21 6,049,751  Available speed ratio modification for splitter transmission
- 22 5,989,146  On-demand four-wheel drive transmission
- 23 5,946,972  Available speed ratio modification for splitter transmission
- 24 5,505,674  Control system with failsafe range passages in a changeover valve for shift-by-wire automatic transmission
- 25 5,409,434  Control system with failsafe for shift-by-wire automatic transmission


Results of Search in US Patent Collection db for:

((((SPEC/"shift-by-wire" AND ACLM/range) AND SPEC/vehicle) AND SPEC/"first range") AND

1 6,984,191  Range determination apparatus, range determination method, and program therefor

2 6,866,611  Vehicle range shift mechanism

3 5,505,674  Control system with failsafe range passages in a changeover valve for shift-by-wire automatic transmission

4 5,409,434  Control system with failsafe for shift-by-wire automatic transmission

Shift-By-Wire System For Allison Transmissions

Mike Brezonick

10/776267

New Arens Controls design targets 1000, 2000 and 2400 automatics in medium-duty truck, bus applications

While electronic systems have steadily made their way into engines and powertrain components over the last dozen years, it's still not yet an all-electronic world. Though engines, transmissions and hydraulics have more and more begun to integrate high precision electronic systems, very often these high tech components are operated by something as simple as a push-pull control. And while that solution still works fine for many types of vehicles and equipment, in some cases equipment manufacturers and operators are beginning to look for more advanced control and actuation systems that can help them more fully realize the capabilities of their advanced electronic components.

It was with that in mind that Arens Controls LLC developed a new shift-by-wire system for Allison Transmission's light commercial vehicle (LCT) transmissions, specifically the 1000, 2000/2400 series units. Introduced in late 1998, the 1000/2000 series is a family of compact five-speed automatic transmissions designed for a range of vehicle applications from Class 3 to Class 7. Input hp ranges from 180 to 340 hp, while net torque ranges from 445 to 520 lb.ft. The new Arens shift system is a bolt-on design engineered to offer enhanced control, greater system monitoring capability and easier installation with no maintenance for the life of the unit.

"It's really something that our customers started asking for," said Jim Hoadley, vice president of sales for the Evanston, Ill.-based manufacturer. "We had customers coming to us and saying, we need you to build us a long cable that has less backlash so we can accommodate the resolution we need at the transmission."

With a cable system, it's almost impossible to satisfy a rear-engine configuration because of the length of the cable, the backlash associated with it and the reduction of efficiency leading to greater operator shift effort. In order to get what they were asking for, we had to develop the next generation system, which is an electronic system."

The development of the shift-by-wire system was a natural progression for Arens in several ways. From a technology standpoint, it continued the company's evolution as a supplier of advanced shift control systems, including custom electromechanical controls, input devices, controllers, actuators and display assemblies. As this capability has grown, Arens has managed to maintain its standing as a leading supplier of mechanical controls, primarily push-pull cable systems and precision mechanical mechanisms used on ag tractors, construction machines and other mobile equipment.

Arens has developed a close relationship with Allison over the years as the supplier of the company's electromechanical shift selectors for medium- and heavy-duty transmissions used in a wide range of vehicles and equipment.

"We have a long-term relationship with Allison," said Hoadley. "And since Allison leaves the selection of the shift system for the LCT to the OEM, we can offer customized versions for different applications."

The primary components of the new Arens shift-by-wire system consist of a shift selector, interface module, actuator control module, neutral safety back-up switch and position sensor/actuator. The shift selector incorporates a pushbutton selection of park, reverse, neutral and drive, with up-down arrows for bumping between forward gears. Easily readable with backlit buttons, the selector module includes a system test button and can be optionally equipped with an enhanced LED display that can show a range of operating parameters. "Based on the type of display the OE would choose, we can display transmission information over and above that of basic gear indication," said Hoadley. "Anything that can be sent out from the transmission control module -- temperature, oil level, diagnostic information, etc."

The interface module, what Arens calls "the heart of the system," is the lynchpin between the input and actuation functions. With software and electronics designed by Arens specifically for this application -- "this is not a fits-all system," noted Hoadley -- it utilizes control algorithms based on Allison's third generation World Transmission technology. The system can be adapted to any kind of shift selector -- pushbutton, lever or column shifter -- and can include J 1587 or CAN output for display or diagnostics. "The electronics could allow a multitude of inputs as far as safety features or software concerns," said Hoadley. "For example, if the operator has the PTO engaged or the dump box is up and he selects drive or reverse, maybe you want to inhibit that command."

"Maybe you don't want to permit vehicle motion with the doors open or with the trailer not hooked up properly. We can incorporate a lot of vehicle electronic signals into decision-making processing power here. You don't have that option on a mechanical system."

"It's limited only by the connector size and the number of hard wiring points you want to bring in. As far as processing power, it could handle 20 or more inputs."

The actuator control module, which is packaged with the interface module, operates the integrated position sensor/motor actuator that mounts directly to the transmission input shaft. The sensor/motor actuator incorporates an electric motor and gearbox, along with a non-contact Hall effect sensor for position feedback.

"One of the challenges with the 1000/2000/2400 is that it's a five-speed transmission, but you are limited by the NSBU switch and manual shaft to four forward ranges," said Hoadley "You can't discretely access every forward gear. So what we did is interface with Allison's transmission control unit and physically move the manual shaft to allow discrete access to all five forward gears."

"Allison does not recommend the best way to rotate the manual shaft, as long as you do it within the degree of precision they specify. The Arens system has position sensing resolution to 2/10 of a degree, far greater precision than Allison requires." That precision is also sufficient that at some point, the neutral safety back-up switch could be eliminated, Hoadley said.

Actuator torque requirements are 3 lb.ft. for range shift, with a 25 lb.ft. park pull-out for the worst case vehicle. The actuator can provide a shift from park to drive in approximately 1/3 of a second, with gear-to-gear shifting in approximately 1/8 of a second. "Our system physically responds faster than the transmission can hydraulically respond," Hoadley noted. "We had one customer who said that when the truck gets into snow, they have to rock it back and forth to get it rolling and they wondered if our system would respond quickly enough."

"Our system will, but you have to wait for the transmission to catch up in order to rock the vehicle. If you just push the "F" and "R" buttons, our system will shift from forward to reverse faster than the transmission can respond."

Besides its performance characteristics, a real advantage to the shift-by-wire system involves installation. "You bolt the actuator module onto the transmission with our mounting bracket and you have a plug-in connection between the cab and the chassis," said Hoadley. "It doesn't compromise anything on the transmission and it gives you clear access to both pto mounting pads."

"It's especially great for the custom body manufacturers. In most cases, they're doing all their cab work in their own facility and the chassis rolls in from a supplier. In a lot of cases, they have to tear everything up to route cables, shifters and pedestals. It can be a very difficult installation. Our new system installation is as simple as plugging in a harness."

"Another advantage is the elimination of wear items like cables and linkages that require periodic adjustment and replacement."

Ours is a sealed-for-life unit, no adjustment or maintenance necessary. Large fleet owners see that as a tremendous reduction in potential adjustment in maintenance costs."

In development for approximately a year, the shift-by-wire system has undergone extensive in-house testing -- the company built a special test stand as part of the project -- and is currently undergoing prototype testing on several vehicles in different parts of the country. "We will put additional prototype systems out in the field with select OEMs and fleets early this year," Hoadley said. "Time to production is probably another year or so, depending on vehicle specific validation testing."

All of Arens' shift-by-wire systems are manufactured at the company's ISO 9001/OS 9000 certified facility in Evanston.

COPYRIGHT 2001 Diesel & Gas Turbine Publications

COPYRIGHT 2001 Gale Group